The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended) A method for monitoring a database, the database being managed by a database server, comprising:

collecting ~~submitting a first set of one or more database queries, to a database server that manages the database, to retrieve~~, from the database server that manages the database, data sets maintained permanently by the database server and comprising user behavior data that indicates a first set of behavior ~~one or more actions performed,~~ by one or more users, ~~as a result of the one or more users executing a first set of database statements against~~ relative to the database, wherein the collecting includes reading, from the database server, the data sets comprising user behavior data;

processing and storing one or more sets of user behavior data as historical data, said one or more sets of user behavior data including said user behavior data that ~~was retrieved from the database server in response to the first set of one or more database queries being executed against the database~~ indicates the first set of behavior by the one or more users relative to the database;

analyzing the historical data to determine behavior patterns;

receiving ~~submitting a second set of one or more database queries, to the database server, to retrieve~~, from the database server that manages the database, data sets maintained permanently by the database server and comprising a new set of user behavior data that indicates a second set of ~~one or more actions performed,~~ behavior by the one or more users, ~~as a result of the one or more users executing a second set of database statements against~~ relative to the database, the receiving includes reading, from the database server, the data sets comprising the new set of user behavior data;

performing a comparison ~~between~~ based on the new set of user behavior data and the determined behavior patterns;

determining, based on the comparison, whether the new set of user behavior data satisfies a set of criteria;

if the new set of user behavior data satisfies the set of criteria, then determining that the new set of user behavior data represents anomalous activity; and

responding to the determination by performing a targeted operation.

2.   (Currently Amended) The method of claim 1, further comprising:

determining if the new set of <u>user behavior</u> data violates a rule based policy; and

if the new set of <u>user behavior</u> data violates the rule based policy, then determining that
the new set of <u>user behavior</u> data represents anomalous activity.

3.   (Currently Amended) The method of claim 2, wherein <u>collecting user behavior data</u>
~~submitting the first set of one or more database queries to the database server further~~
comprises:

reading information from an audit trail ~~or dynamic performance views~~ of a database
manager.

4.   (Currently Amended) The method of claim 3, wherein <u>collecting user behavior data</u>
~~submitting the first set of one or more database queries to the database server~~ further
comprises <u>collecting the user behavior data from</u> ~~submitting the first set of one or more
database queries to~~ the database server at a monitoring level selected from at least one of:

information about database access for one or more selected database objects;

information about database access for one or more selected database users; and

information about database access for one or more selected database user sessions.

5.   (Currently Amended) The method of claim 3, wherein <u>collecting user behavior data</u>
~~submitting the first set of one or more database queries to the database server~~ further
comprises:

receiving a type of information to be monitored;

determining a monitoring level from the type of information; and

activating audit options of the database manager based upon the monitoring level
determined.

6.   (Original) The method of claim 2, wherein analyzing the historical data to determine
behavior patterns further comprises:

determining a statistical model from the historical data.

7. (Original) The method of claim 6, wherein determining a statistical model from the historical data further comprises:

determining a frequency of database access from the historical data;

determining a probability function for frequencies of database access; and

determining a cumulative probability function from the probability function.

8. (Previously Presented) The method of claim 7, wherein performing a comparison between the new set of data and the determined behavior patterns further comprises:

testing a hypothesis using the new set of data against the statistical model.

9. (Original) The method of claim 8, wherein testing a hypothesis using the new set of data against the statistical model further comprises:

determining a frequency of database access for the new set of data; and

determining the threshold value from a guard criteria and a probability function parameter.

10. (Original) The method of claim 9, wherein testing a hypothesis using the new set of data against the statistical model pattern further comprises:

comparing the frequency of database access for the new set of data with the threshold value.

11. (Original) The method of claim 7, wherein the historical information is about database access for one or more selected database objects and wherein determining a frequency of database access from the historical data further comprises determining a frequency of at least one of:

object access frequency by hour of day, object access frequency by hour of day and operating system user, object access frequency by hour of day and database user, object access frequency by hour of day and location, object access frequency by hour of day and combination of at least two of operating system user, database user and location.

12. (Original) The method of claim 7, wherein the historical information is about database access for one or more selected database users and wherein determining a frequency of database access from the historical data further comprises determining a frequency of at

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least one of:

user access frequency by hour of day, user access frequency by hour of day and operating system user, user access frequency by hour of day and database user, user access frequency by hour of day and location, user access frequency by hour of day and a combination of at least two of operating system user, database user, and location.

13. (Original) The method of claim 7, wherein the historical information is about database access for one or more selected database user sessions and wherein determining a frequency of database access from the historical data further comprises determining a frequency of at least one of:

number of page reads per session, access duration per session, number of page reads per unit time.

14. (Original) The method of claim 1, wherein performing a targeted operation comprises at least one of: raising an alert; sending an email; producing a report; performing a visualization.

15. (Currently Amended) A computer-readable storage medium carrying one or more sequences of instructions for reverting to a recovery configuration in response to device faults, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:

collecting ~~submitting a first set of one or more database queries, to a database server that manages the database, to retrieve~~, from ~~the~~ a database server that manages a database, data sets maintained permanently by the database server and comprising user behavior data that indicates a first set of behavior ~~one or more actions performed,~~ by one or more users, ~~as a result of the one or more users executing a first set of database statements against~~ relative to the database, wherein the collecting includes reading, from the database server, the data sets comprising user behavior data;

processing and storing one or more sets of user behavior data as historical data, said one or more sets of user behavior data including said user behavior data that ~~was retrieved from the database server in response to the first set of one or more database queries being executed against the database~~ indicates the first set of behavior by the one or more users relative to the database;

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analyzing the historical data to determine behavior patterns;

receiving ~~submitting a second set of one or more database queries, to the database server,~~ ~~to retrieve~~, from the database server that manages the database, data sets maintained permanently by the database server and comprising a new set of user behavior data that indicates a second set of ~~one or more actions performed,~~ behavior by the one or more users~~, as a result of the one or more users executing a~~ ~~second set of database statements against~~ relative to the database, the receiving includes reading, from the database server, the data sets comprising the new set of user behavior data;

performing a comparison ~~between~~ based on the new set of user behavior data and the determined behavior patterns;

determining based on the comparison, whether the new set of user behavior data satisfies a set of criteria;

if the new set of user behavior data satisfies the set of criteria, then determining that the new set of user behavior data represents anomalous activity; and

responding to the determination by performing a targeted operation.

16.   (Currently Amended) The computer-readable storage medium of claim 15, further comprising instructions which, when executed by the one or more processors, cause the one or more processors to carry out the steps of:

determining if the new set of user behavior data violates a rule based policy; and

if the new set of user behavior data violates the rule based policy, then determining that the new set of user behavior data represents anomalous activity.

17.   (Currently Amended) The computer-readable storage medium of claim 16, wherein the instructions for carrying out the step of collecting user behavior data ~~submitting the first~~ ~~set of one or more database queries to the database server further~~ comprise instructions for carrying out the step of:

reading information from an audit trail of the database manager.

18.   (Currently Amended) The computer-readable storage medium of claim 17, wherein the instructions for carrying out the step of ~~submitting the first set of one or more database~~ ~~queries to the database server~~ collecting user behavior data further comprise instructions for carrying out the step of ~~submitting the first set of one or more database queries to the~~

~~database server~~ <u>collecting user behavior data</u> at a monitoring level selected from at least one of:

information about database access for one or more selected database objects;

information about database access for one or more selected database users; and

information about database access for one or more selected database user sessions.

19.   (Currently Amended) The computer-readable storage medium of claim 17, wherein the instructions for carrying out the step of ~~submitting the first set of one or more database queries to the database server~~<u>collecting user behavior data</u> further comprise instructions for carrying out the steps of:

receiving a type of information to be monitored;

determining a monitoring level from the type of information; and

activating audit options of the database manager based upon the monitoring level
        determined.

20.   (Previously Presented) The computer-readable storage medium of claim 16, wherein the instructions for carrying out the step of analyzing the historical data to determine behavior patterns further comprise instructions for carrying out the step of:

determining a statistical model from the historical data.

21.   (Previously Presented) The computer-readable storage medium of claim 20, wherein the instructions for carrying out the step of determining a statistical model from the historical data further comprise instructions for carrying out the step of:

determining a frequency of database access from the historical data;

determining a probability function for frequencies of database access; and

determining a cumulative probability function from the probability function.

22.   (Previously Presented) The computer-readable storage medium of claim 21, wherein the instructions for carrying out the step of performing a comparison between the new set of data and the determined behavior patterns further comprise instructions for carrying out the step of:

testing a hypothesis using the new set of data against the statistical model.

23.   (Previously Presented) The computer-readable storage medium of claim 22, wherein the

instructions for carrying out the step of testing a hypothesis using the new set of data against the statistical model further comprise instructions for carrying out the steps of:

determining a frequency of database access for the new set of data; and

determining the threshold value from a guard criteria and a probability function parameter.

24. (Previously Presented) The computer-readable storage medium of claim 23, wherein the instructions for carrying out the step of testing a hypothesis using the new set of data against the statistical model further comprise instructions for carrying out the step of:

comparing the frequency of database access for the new set of data with the threshold value.

25. (Previously Presented) The computer-readable storage medium of claim 21, wherein the historical information is about database access for one or more selected database objects and wherein the instructions for carrying out the step of determining a frequency of database access from the historical data further comprise instructions for carrying out the step of determining a frequency of at least one of:

object access frequency by hour of day, object access frequency by hour of day and operating system user, object access frequency by hour of day and database user, object access frequency by hour of day and location and object access frequency by hour of day and a combination of at least two of operating system user, database user and location.

26. (Previously Presented) The computer readable storage medium of claim 21, wherein the historical information is about database access for one or more selected database users and wherein the instructions for carrying out the step of determining a frequency of database access from the historical data further comprise instructions for carrying out the step of determining a frequency of at least one of:

user access frequency by hour of day, user access frequency by hour of day and operating system user, user access frequency by hour of day and database user, user access frequency by hour of day and location and user access frequency by hour of day and a combination of at least two of operating system user, database user, and location.

27.   (Previously Presented) The computer readable storage medium of claim 21, wherein the historical information is about database access for one or more selected database user sessions and wherein the instructions for carrying out the step of determining a frequency of database access from the historical data further comprise instructions for carrying out the step of determining a frequency of at least one of:

number of page reads per session, access duration per session, number of page reads per unit time.

28.   (Previously Presented) The computer readable storage medium of claim 15, wherein the instructions for carrying out the step of performing a targeted operation comprises comprise instructions for carrying out at least one of: raising an alert; sending an email; producing a report; performing a visualization.

29.   (Currently Amended) An apparatus, comprising:

means for collecting ~~submitting a first set of one or more database queries, to a database server that manages the database, to retrieve~~, from ~~the~~ a database server that manages a database, data sets maintained permanently by the database server and comprising user behavior data that indicates a first set of behavior ~~one or more actions performed,~~ by one or more users, ~~as a result of the one or more users executing a first set of database statements against~~ relative to the database, wherein the collecting includes reading, from the database server, the data sets comprising user behavior;

means for processing and storing one or more sets of user behavior data as historical data, said one or more sets of user behavior data including said user behavior data ~~that was retrieved from the database server in response to the first set of one or more database queries being executed against the database~~ indicates the first set of behavior by the one or more users relative to the database;

means for analyzing the historical data to determine behavior patterns;

means for receiving ~~submitting a second set of one or more database queries, to the database server, to retrieve~~, from the database server that manages the database, data sets maintained permanently by the database server and comprising a new set of user behavior data that indicates a second set of ~~one or more actions performed,~~ behavior by the one or more users, ~~as a result of the one or more users executing a second set of database statements~~ relative to ~~against~~ the database, the means for

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receiving including means for reading, from the database server, the data sets comprising the new set of user behavior data;

means for performing a comparison ~~between~~ based on the new set of user behavior data and the determined behavior patterns;

means for determining based on the comparison, whether the new set of user behavior data satisfies a set of criteria;

means for determining that the new set of user behavior data represents anomalous activity, if the new set of user behavior data satisfies the set of criteria; and

means for responding to the determination by performing a targeted operation.

30.   (Currently Amended) An apparatus, comprising:

a data collector for (a) collecting, from a database server that manages a database, data sets maintained permanently by the database server and comprising user behavior data that indicates a first set of behavior ~~one or more actions performed,~~ by one or more users~~, as a result of the one or more users executing a first set of database statements against~~ relative to the database, wherein the collecting includes reading, from the database server, the data sets comprising user behavior data, (b) processing and storing the one or more sets of user behavior data as historical data, said one or more sets of user behavior data including said user behavior data that ~~was retrieved from the database server in response to the first set of one or more database queries being executed against the database~~ indicates the first set of behavior by the one or more users relative to the database, and (c) receiving ~~submitting a second set of one or more database queries, to the database server, to retrieve~~, from the database server that manages the database, data sets maintained permanently by the database server and comprising a new set of user behavior data that indicates a second set of ~~one or more actions performed,~~ behavior by the one or more users~~, as a result of the one or more users executing a second set of database statements against~~ relative to the database, the receiving including reading, from the database server, the data sets comprising the new set of user behavior data;

a data analyzer for analyzing the historical data to determine behavior patterns; and

an anomaly detector for (a) performing a comparison ~~between~~ based on the new set of user behavior data and the determined behavior patterns, (b) determining, based on the comparison, whether the new set of user behavior data satisfies a set of

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criteria, (c) determining that the new set of <u>user behavior</u> data represents anomalous activity if the new set of <u>user behavior</u> data satisfies the set of criteria, and (d) responding to the determination by performing a targeted operation.

31.　　(New) The method of claim 3, wherein collecting user behavior data further comprises:
reading information from dynamic performance views of a database manager.

32.　　(New) The computer-readable storage medium of claim 17, wherein collecting user behavior data further comprises:
reading information from dynamic performance views of a database manager.

33.　　(New) The method of claim 1, wherein the data sets maintained permanently by the database server include audit trails.

34.　　(New) The computer-readable storage medium of claim 15, wherein the data sets maintained permanently by the database server include audit trails.